Volunteer Lake Assessment Program Individual Lake Reports

RESERVOIR POND, DORCHESTER, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	289	**Max. Depth (m):**	13.7	**Flushing Rate (yr^{1})**	0.4
Surface Area (Ac.):	111	**Mean Depth (m):**	3.8	**P Retention Coef:**	0.84
Shore Length (m):	3,700	**Volume (m^3):**	1,728,000	**Elevation (ft):**	1340

TROPHIC CLASSIFICATION

Year	Trophic class
1981	OLIGOTROPHIC
2001	OLIGOTROPHIC

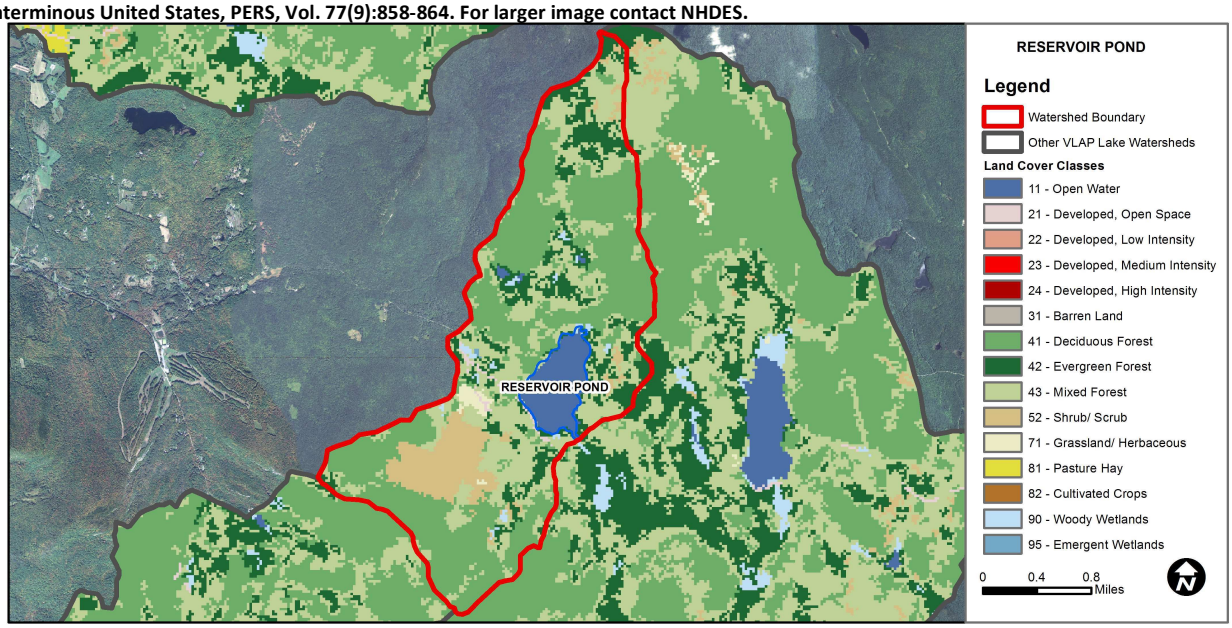
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	>/=5 samples and median is >threshold.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	D.O. (mg/L)	Very Good	At least 10 samples with 0 exceedances of criteria.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Slightly Bad	>5 samples and median is > threshold.
Primary Contact Recreation	E. coli	No Data	No Data for this parameter.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



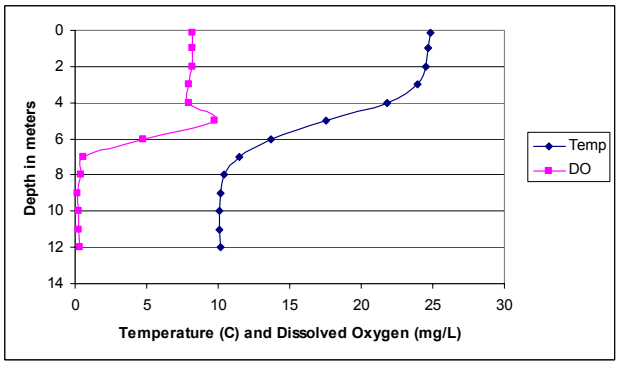
Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	5.66	Barren Land	0	Grassland/Herbaceous	0.75
Developed-Open Space	0.52	Deciduous Forest	42.36	Pasture Hay	0
Developed-Low Intensity	0	Evergreen Forest	13.48	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	28.03	Woody Wetlands	0.91
Developed-High Intensity	0	Shrub-Scrub	8.16	Emergent Wetlands	0.05

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
RESERVOIR POND, LYME, NH
2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic)*

- **CHLOROPHYLL-A:** The chlorophyll level decreased slightly from 2011 and was approximately equal to the NH lake median. Historical trend analysis indicates chlorophyll levels tend to fluctuate from year to year.
- **CONDUCTIVITY/CHLORIDE:** Deep spot and Outlet conductivity was very low and well below the NH lake median. Cutter and Townline Brooks conductivity were greater than the other stations however, approximately equal to the NH lake median.
- **TOTAL PHOSPHORUS:** Deep spot phosphorus levels decreased from 2011, were very low and well below the NH lake median. Cutter Brook phosphorus was invalidated due to cross-contamination of sediment and/or organic material.
- **TRANSPARENCY:** Transparency improved slightly in 2011 and was greater than the NH lake median. Historical trend analysis indicates a relatively stable transparency since monitoring began.
- **TURBIDITY:** Turbidity levels were relatively low. Cutter Brook turbidity was invalidated as duplicate sample results did not meet acceptance criteria.
- **PH:** pH levels decreased in the Metalimnion (middle water layer) and Hypolimnion (lower water layer) due to natural processes and have historically been less than desirable.
- **RECOMMENDED ACTIONS:** Conduct chloride monitoring in Cutter and Townline Brooks to assess if road salting is impacting conductivity levels. Increase monitoring frequency to three times per summer to better assess summer water quality and historical trend analysis.

Dissolved Oxygen & Temperature Analysis



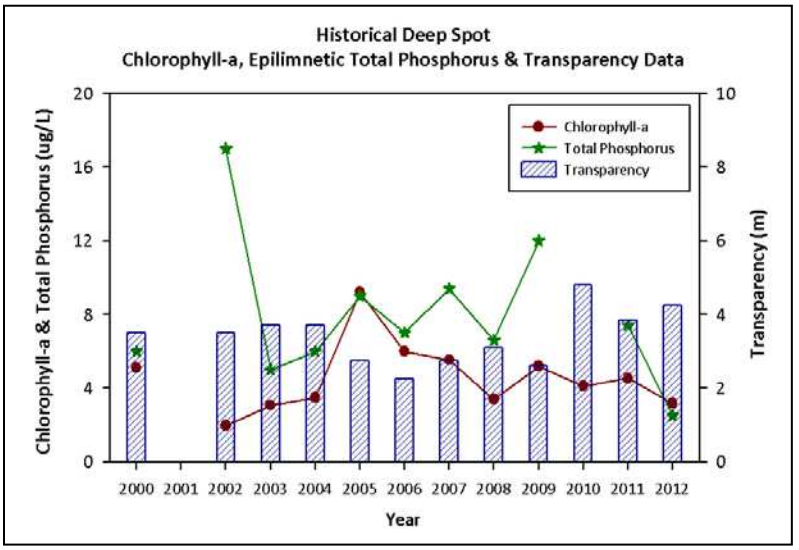
Station Name	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	Total P ug/l	Trans. m NVS	Turb. ntu	pH
Table 1. 2012 Average Water Quality Data for RESERVOIR POND							
Cutter Brook			40.7				6.46
Deep Epilimnion	3.10	3.18	17.1	3	4.25	0.67	6.85
Deep Metalimnion			16.4	6		1.03	6.10
Deep Hypolimnion			19.2	9		1.42	5.77
Outlet			17.5	5		0.73	6.48
Townline Brook			39.2	11		0.80	6.73

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.
Transparency	Stable	Data not significantly increasing or decreasing.
Phosphorus (epilimnion)	N/A	Ten consecutive years of data necessary for trend analysis.



This report was generated by the NH DES Volunteer Lake Assessment Program (VLAP). For more information contact:
Sara Steiner
PO Box 95
Concord, NH 03302-0095
(603) 271-2658
sara.steiner@des.nh.gov